

Serial No. 10/696,962
Art Unit 1714

Amendment A

Remarks:

Responsive to the Official Action mailed June 22, 2005, Applicant respectfully requests reconsideration, reexamination and allowance of claims 1, 3, 6-7, 9, 11 and 14-17 in view of the above-noted amendments and the following remarks.

The Examiner has first rejected claims 1-17 under 35 U.S.C. 112, first paragraph on the grounds that the specification, while enabling for ethylene diamine phosphate and melamine with nanoclay does not reasonably provide enablement for all non-halogenated flame retardants and any synergist. The Examiner has also rejected claims 4 and 12 under 35 U.S.C. 112, first paragraph in that the specification is not enabling for all phosphates.

Applicant has amended the claims, and specifically claims 1 and 9 to indicate that the polymer is polypropylene and that the flame retardant is a non-halogenated phosphate salt flame retardant. Applicant submits that the claims, as amended are, in fact enabled by the specification within the scope of the claims, and accordingly requests that the Examiner withdraw this basis for rejection.

Next, the Examiner has rejected claims 1-15 are rejected under 35 U.S.C. 102(e) as anticipated by Ebrahimian et al. U.S. Patent No. 6,797,760. The Examiner characterizes Ebrahimian as disclosing polymer and nanoclay, polypropylene, phosphates, melamine octamolybdate and concentrations in various of the claims. The Examiner states further that the oxygen index cited in claim 23 (of Ebrahimian) fulfills the flammability-rating requirement.

As amended, the claims are directed to a non-halogenated flame retardant composition formed from a polypropylene polymer base material, a non-halogenated phosphate salt flame retardant material present in a concentration of about 25 percent to no less than about 45 percent by weight of the composition and a heavy metal-free clay synergist material present in a concentration of about 1 percent by weight of the composition, in which the composition achieves a flammability rating of at least V-2 when tested in accordance with UL testing conditions.

Applicant submits that as amended the claims are not anticipated by Ebrahimian. In fact, one of the basic premises of the present invention (which is now more clearly defined in the claims)

Serial No. 10/696,962
Art Unit 1714

Amendment A

is that the present material is non-halogenated. This is clearly not the case with the materials of Ebrahimi. Rather, the Ebrahimi patent discloses the use of fluoropolymers in each and every one of the material compositions, and in many of the compositions, Ebrahimi discloses the use of chlorinated resins as well (see, e.g., claim 10). Although Ebrahimi discloses the use of polypropylene, it is only as an adjunct to the use of the fluoropolymers. Accordingly, Applicant submits that claims 1-15 are anticipated by the Ebrahimi patent and respectfully requests that this rejection be withdrawn.

Next, the Examiner has rejected claims 1-15 are rejected under 35 U.S.C. 103(a) as unpatentable over Ebrahimi, in view of Bodiger et al. 5,849,827. The Examiner has characterized Bodiger as teaching polymer and nanoparticles, TiN, silica and WC and phosphate flame-retardants. The Examiner has concluded that it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use an organophosphate flame-retardant in the composition of Ebrahimi because Bodiger proves that the flame retardance of polymers improve if an organophosphate is used with both metal oxide and non metal oxide nanoparticles.

However as set forth above, the basis of the present invention is completely defeated by the use of the material disclosed in the Ebrahimi patent. That is, use of the halogenated polymeric base material would defeat (and in fact teaches away from) the purpose of the present invention which is to eliminate halogens in the flame retardant material. Accordingly, Applicant submits that the combination of Ebrahimi and Bodiger still fails to make obvious the claimed invention.

Next, the Examiner has rejected claims 1-17 under 35 U.S.C. 103(a) as unpatentable over Nalepa, U.S. Patent No. 5,204,393 in view of Bodiger. The Examiner characterizes Nalepa as disclosing polyolefin, ammonium polyphosphate, and melamine cyanurate with small particle size silica, the claimed concentrations, polypropylene and flame retardant. The Examiner states that although the particle size of the silica disclosed in Nalepa is defined only as less than 4.5 microns, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use silica in the particle size range claimed by Bodiger since this would maximize the surface area and would, according to Bodiger result in maximum flame retardance, when used in

Serial No. 10/696,962
Art Unit 1714

Amendment A

conjunction with organophosphates.


Applicant respectfully traverses the Examiner's rejection. Specifically, neither the Nalepa nor the Bodiger patents disclose the use of a non-metal-containing clay as a synergist in their respective flame retardant formulations, as in the amended claims. Accordingly, Applicant respectfully requests that the Examiner withdraw this basis for rejection as well.

Accordingly, Applicant submits that the art of record standing alone or in any combination does not disclose the claimed invention, nor would the art as a whole suggest or motivate one skilled in the art to make the changes necessary to render the claimed invention obvious. To this end, Applicant respectfully requests that the Examiner withdraw the remaining bases for rejection of the present claims and allow this application to progress to issue.

Should there be any questions or concerns in connection with the present submittal, it is respectfully requested that the undersigned be contacted.

Respectfully submitted,

By


Paul F. Donovan
Reg. No. 39,962

August 23, 2005
Illinois Tool Works Inc.
3600 West Lake Avenue
Glenview, Illinois 60026
(847) 724-7500 Telephone
(847) 724-4160 Facsimile